

1. A solid brazing component having a liquidus temperature above 840°F selected from the group consisting of wire, strip, foil and preforms, wherein the brazing component is made of an alloy consisting essentially of, in weight percent:

- (a) about 4-9% phosphorus;
- 5 (b) about 0.1-10% tin;
- (c) about 0.1-15% nickel;
- (d) up to about 18% silver;
- (e) up to about 3% silicon;
- (f) up to about 4% antimony;
- 10 (g) up to about 3% manganese; and

the balance copper.

2. The component of claim 1 wherein the alloy consists essentially of:

- (d) about 0.1-18% silver.

3. The component of claim 2 wherein the alloy consists essentially of:

- (c) about 3-10% nickel.

4. The component of claim 1 wherein the alloy consists essentially of:

- (c) about 5-8% nickel.

5. The component of claim 1 wherein the brazing component has a liquidus temperature less than about 1410°F and a solidus temperature less than about 1100°F.

6. The component of claim 5 wherein the alloy consists essentially of:

- (b) about 4-8% tin; and
- (c) about 5-8% nickel.
- (d) about 1-18% silver; and
- (e) about 0.001-0.1% silicon.

7. The component of claim 6 wherein the alloy exhibits a major thermal arrest at a temperature below about 1250°F.

8. The component of claim 1 wherein the alloy consists essentially of:

- (a) about 4-9% phosphorus;
- (b) about 4-8% tin;
- (c) about 3-10% nickel;
- (d) up to about 1-18% silver; and

the balance copper.

9. The component of claim 1 wherein the alloy consists essentially of:

- (a) about 4-7% phosphorus;
- (b) about 4-8% tin;
- (c) about 5-8% nickel;
- (d) about 6-15% silver;
- (e) about 0.001-1% silicon; and

the balance copper.

10. The component of claim 2 wherein the alloy consists essentially of:

- (a) about 5-6% phosphorus;
- (b) about 6-7% tin;
- (c) about 5-8% nickel;
- 5 (d) about 6-10% silver;
- (e) about 0.015-0.02% silicon; and

the balance copper.

11. The component of claim 2 wherein the alloy consists essentially of:

- (a) about 5-6% phosphorus;
- (b) about 6-7% tin;
- (c) about 5-8% nickel;
- 5 (d) about 15% silver;
- (e) about 0.015-0.02% silicon; and

the balance copper.

12. The component of claim 2 wherein the alloy consists essentially of:

- (a) about 5-6% phosphorus;
- (b) about 5-7% tin;
- (c) about 6-8% nickel;
- 5 (d) about 15% silver;
- (e) about 0.01-0.1% silicon; and

the balance copper.

13. The component of claim 1 wherein the alloy consists essentially of:

(a) about 4-7% phosphorus;

(b) about 5-7% tin;

(c) about 5-8% nickel;

5 (d) about 6-15% silver; and

the balance copper.

14. A method of forming a solid brazing component having a liquidus temperature above 840°F comprising the steps of:

forming an alloy melt consisting essentially of, in weight percent:

- (a) about 4-9% phosphorus;
- 5 (b) about 0.1-10% tin;
- (c) about 0.1-15% nickel;
- (d) up to about 18% silver;
- (e) up to about 3% silicon;
- (f) up to about 4% antimony;
- 10 (g) up to about 3% manganese; and

the balance copper;

continuously casting the alloy melt into a billet;

fabricating the billet into a solid brazing component selected from the group consisting of wire, strip, foil and preform.

15. The method of claim 14 wherein the billet is fabricated into a wire by extrusion, the method further comprising drawing the wire one or more times to a final desired thickness.

16. The method of claim 15 further comprising forming the wire into a preform.

17. A method of forming a brazed joint comprising the steps of:
forming a solid brazing component by the method of claim 14;
placing the solid brazing component between two metal parts;
heating the solid brazing component to melt at least a major portion of
5 the alloy to cause the alloy to wet and flow between the two metal parts;
cooling the alloy to form a brazed joint with a raised cap between the two
metal parts, wherein the brazed joint is substantially free of black metal oxide.
18. The method of claim 17 wherein the solid brazing component is placed
between two copper alloy parts and the brazed joint is visually distinguishable from the
parts.
19. The method of claim 17 wherein the solid brazing component is placed
between two tubular shaped parts.
20. The method of claim 17 wherein the solid brazing component is heated
to a temperature less than 1410°F to melt the major portion.
21. The method of claim 17 wherein the solid brazing component is heated
to a temperature less than 1300°F to melt the major portion.